

Integrating Protected Area Management with Local Needs and Aspirations

Conservationists recognize that many protected areas have limited future prospects without the cooperation and support of local people, especially in developing countries. Since the 1980s Integrated Conservation and Development Projects (ICDPs) have attempted to reconcile park management with local needs and aspirations, usually with disappointing results. Achieving local cooperation and support without jeopardizing conservation goals remains a top priority for parks, however. Fortunately, the lessons from the ICDP experience provide an important opportunity to inform the next generation of biodiversity conservation programs, including those concerned with poverty alleviation as well as those working at ecosystem and landscape scales. More recent and more promising approaches have started to incorporate elements of adaptive management, new partnership models with stakeholders and the vertical integration of site-level work with policy initiatives and institutional development.

INTRODUCTION

Protected areas such as national parks and reserves now cover more than 12% of the world's land area (1). This enormous portfolio of real estate includes spectacular and wondrous places, extraordinary species and ecosystems, irreplaceable examples of cultural and natural heritage, and refuges of peace and spirituality. These protected areas are on the front line in the campaign to conserve biodiversity on the planet Earth.

Biologists argue that protected areas are not enough; that even if all of the ecological systems contained in protected areas remained intact, this would still be woefully insufficient for humanity's future needs. The converse must be even more certain. If protected areas cannot be secured and managed effectively, then we will lose fundamental elements of biodiversity forever. We do not know what this would mean and we must hope never to find out.

Protected areas face a myriad of threats to their integrity and few are adequately managed, especially in the tropics where biodiversity is concentrated (2). Among the key issues, there is now a broad consensus that most protected areas will have limited future prospects without the cooperation and support of local populations. This has been a key doctrine of international conservation efforts for at least two decades. Putting this doctrine into practice has proven frustratingly difficult, however, especially in developing countries (3–5).

Park management has often prioritized keeping local people out, following the view that human activities are incompatible with ecosystem conservation. Some protected area residents and neighbors have lost their homes and their livelihoods as a result. Having alienated many of their primary users while failing to build political support, most national conservation agencies have also shown neither the capacity nor the resources to manage the vast protected areas under

their jurisdiction. Growing pressure on protected areas from increasing populations, persistent poverty and the penetration of the market economy have all compounded the futility of trying to manage parks and reserves by isolating them from human activities. In some cases, decentralization of central government authority and democratization have increased the need for park managers to respond to the needs and aspirations of their neighbors (6).

Conservation organizations responded during the 1980s by pioneering new approaches to protected area management that promised to build support among local constituents by sharing social and economic benefits from protected areas. The goals of these initiatives included compensating local people for lack of access to protected areas and providing alternative income sources that would allow people to benefit economically from conservation while refraining from environmentally-destructive practices. The biosphere reserve concept promoted by UNESCO's Man and the Biosphere Program was a useful theoretical model at this stage, with its clear distinction between core protected areas and multiple-use buffer zones.

A variety of terms have been used to describe these efforts to reconcile protected area management with local needs and aspirations. Although none of these labels has proven entirely satisfactory, our experience suggests that Integrated Conservation and Development Project or Program (ICDP) has been and continues to be a viable collective description for site-based conservation with social or economic development goals, including community-based conservation, ecodevelopment and other approaches containing the elements needed for success (7). More recently ICDPs have been defined as "an approach to the management and conservation of natural resources in areas of significant biodiversity value that aims to reconcile the biodiversity conservation and socio-economic development interests of multiple stakeholders at local regional, national and international levels" (8). This is what we mean when we talk about ICDPs here.

ICDPs initially offered the attractive prospect of contributing to three of the most sought-after goals on the international sustainable development agenda: more effective biodiversity conservation, increased local community participation in conservation and development, and economic development for the rural poor. Such an approach found an enthusiastic audience among the international development agencies that had just added environmental conservation to their mission of stimulating economic growth. Support from these agencies provided financial resources for biodiversity conservation on an unprecedented scale during the 1990s. The result was a proliferation of conservation projects supporting development activities amongst poor, rural communities around parks and reserves, to such an extent that a conservation project without a major emphasis on local people's welfare would have been almost unthinkable. An untested concept in biodiversity conservation had become conventional wisdom in just a handful of years.

This transformation took place in the shadow of a broader debate about the compatibility of environmental conservation and economic development (9–12). In the context of protected areas this argument, which continues today, is about whether biodiversity conservation can co-exist with economic development. ICDP proponents have generally argued that biodiversity conservation goals could be achieved through the means of economic development by using an approach that balances the two, while opponents argued that such an approach was unrealistic and would lead to increased pressure on biodiversity. This argument has been particularly vitriolic in cases where indigenous peoples interests were concerned (13).

Soon after ICDP implementation began, some project reports and analyses cautiously suggested that all was not going well. Such findings were usually overlooked or attributed to start-up problems that would disappear over time. Over time, however, a persuasive body of analytical studies documented a consistent pattern of under-achievement (3, 14–16). By the millennium, there was a growing consensus that the results from the many efforts to balance local people's interests with protected area management in developing countries had been hugely disappointing. Despite significant investments in hundreds of relatively-expensive projects, almost entirely carried out or financed by conservation organizations and international development agencies, there were (and are still) few unambiguously successful cases where local people's needs and aspirations had been reconciled effectively with protected area management (17). This conclusion is now broadly accepted among analysts and some practitioners, although policy makers leading some of the key organizations involved in both conservation and development still appear unaware of it.

The conservation response has been mixed. Some conservation NGOs have started to question or even reject protected area approaches targeting local people (18). Development agencies' increasing focus on poverty mitigation and the Millennium Development Goals has started to limit the funding available for biodiversity, while the steadily increasing pressure to demonstrate quantifiable and early successes from projects seems to be reducing the appeal of ICDPs within these agencies. Perhaps to counteract these signs of funding agency disenchantment, leading conservationists have vigorously renewed their calls for protected areas to make even greater contributions to poverty mitigation, most recently at the 2003 World Parks Congress (WPC) with its theme of "Benefits Beyond Boundaries" (19–21). Interestingly, there was relatively little acknowledgement at the 2003 WPC of the more than two decades of intensive testing of the people-oriented conservation we are discussing here. The apparent "newness" of these ideas could be puzzling to anyone who attended or read the outputs of the 1982 WPC with its theme of "Parks for Development" or the 1992 WPC featuring "Parks for Life", both of which called for more emphasis on the linkages between protected areas and local social and economic development processes (22).

We are convinced that the framework for any "new" approach to protected area management emphasizing poverty mitigation must be informed by a careful analysis of the ICDP experience. The basic rationale that led to the popularity of ICDPs remains unchanged. Demonstrating constructive ways of involving local stakeholders in the conservation and sustainable use of biodiversity in and around the most significant protected areas remains one of the most important challenges and priorities for nature conservation at the beginning of the 21st century (23). How to achieve this cooperation

and support without jeopardizing conservation goals is the subject of this paper. The particular question we attempt to answer is: *how can protected areas and their supporters conserve biodiversity more effectively by engaging and working with local constituents or stakeholders?*

We have not included specific examples in this paper to avoid making necessarily brief references to project experiences that cannot do justice to the complex and subtle issues involved in practical conservation. The alternative – in-depth treatment of a small number of cases – seems equally unsatisfactory as it introduces the prospect of bias based on unrepresentative sampling. Instead, we have concentrated our arguments at the synthesis level, supplemented by citations that will lead the reader to specific cases, including our own recent compilation volume (23).

WHAT WENT WRONG?

The ICDP experience has now been thoroughly examined in what has become a rather discouraging body of literature (3, 7, 17, 24–34). It is not discouraging because of any sign that the *principle* of linking protected area management with local social and economic development is flawed, however. Rather, there is plenty of evidence that it is the *expectations* and *implementation* that have been problematic, with design and implementation mistakes being repeated in apparent disregard of experiences reported from the field.

We now know that many ICDPs were based on naïve assumptions and were too ambitious. Despite the often extraordinary efforts of the professionals leading many of these projects, too much was being expected in too short a time using inadequate tools. ICDPs that have tried to shoehorn the complex and dynamic realities of the protected area frontier into the constraints of a time-bound, tightly planned and predictable project have usually failed. In fact, these difficulties are by no means exclusive to ICDPs, with many similar problems having been encountered over a longer period by a variety of rural development projects.

The project, subject to the constraints and conditions usually applied by aid agencies, seems unsuited to the complex needs of protected area management (35). Projects are intrinsically limited in space, time and numbers of beneficiaries. Halting or mitigating biodiversity loss requires changing the behavior of large numbers of people dispersed over large areas for long periods of time. Projects are inherently unsuited to this. In retrospect, we should not be surprised that ICDPs working in relative isolation have been unable to *i)* address the complex and diverse interests of the people and institutions with claims on land and resource access in and around protected areas *while; ii)* simultaneously providing local people with better livelihood opportunities and access to services; *and iii)* neutralizing the major threats to biodiversity (36).

Many ICDPs have been built on precarious assumptions. First, that rational planning and seed money were the key missing ingredients to achieving 'win-win' solutions allowing nature conservation to peacefully coexist with economic development. Second, that significant benefits from protected areas could readily be generated and then distributed in ways that provided incentives for conservation. Unfortunately, there is little evidence that either of these assumptions apply in any more than a few exceptional cases (37). Our view is that win-win scenarios for conservation and development rarely exist in practice. The more important issue is how to identify, negotiate and implement trade-offs between the in-

terests and claims of multiple stakeholders (38).

ICDPs often began with the assumption that farming and hunting by poor people were the major threat to protected areas, and targeted their activities accordingly. But the activities of local people are often less of a threat to biodiversity than mining, roads, dams, irrigation schemes, resettlement programs, plantations and commercial logging and hunting, often backed by rich and powerful interests operating well outside the influence of park managers or short-term projects. Compounding this problem, many park managers are disconnected from critical local land use and economic development planning processes (17, 29).

A disproportionate emphasis on detailed planning at the expense of implementation is a ubiquitous ICDP pathology. When reality turns out to deviate from the plans, there is rarely sufficient management capacity or budget flexibility to respond accordingly. The selection and planning of ICDP activities are often based on studies and characterizations of "the problem" by outside experts, while in practice the informal knowledge of local people has to be the basis of most resource management decisions taken by a project. It is the behavior of these people that projects usually strive to influence (36).

Considerable efforts are usually invested in eliciting local people to participate in, or at least not to oppose, ICDP activities. However, projects seriously interested in fostering local participation may need to spend many years, if not a decade or more, helping build the capacity of local institutions, even assuming that local and national laws, customs and tenure arrangements permit and support such an approach (39). While local people are usually intended beneficiaries of ICDPs, the original decision to launch an ICDP is rarely theirs and few projects cede significant decision making to local stakeholders despite much rhetoric to the contrary. This means that ICDPs remain outside local systems and any gains they may achieve are unlikely to persist beyond the project life.

ICDPs tended to ally themselves with a single stakeholder, usually either the protected area management agency or an environmental NGO. As such the project automatically became (or at least was perceived as) biased towards this stakeholder's interests. Other stakeholders then lacked incentives to engage with the project and its goals (8). While protected area management agencies are obviously key partners for ICDPs, projects that operate primarily through park management agencies to try to integrate parks and reserves with local development processes often encounter a basic mismatch with these agencies' mandates and capacities, compounded by their limited influence on land use and other development decision making.

Projects tend to focus on activities (social programs and income creation through alternative livelihoods) rather than impacts (on biodiversity). ICDPs usually emphasize community-level social and economic development activities as an indirect step towards more effective conservation in the long-term future. When the linkage between the eventual goal and the activities selected seems distant or vague, as has often been the case with ICDPs, attention inevitably becomes focused on the project activities themselves rather than the impacts of these activities. This often leads to an excessive focus on getting activities completed (on the part of the project implementer) or getting as much as possible out of the project (on the part of the beneficiaries). This disconnect between development activities and desired conservation impacts within ICDPs has often led to a divergence between the benefits obtainable from biodiversity conservation

and the benefits obtainable from the project. Many projects start by emphasizing the former but end up concentrating almost entirely on the latter.

The reader might feel at this point that the "pathology of projects" is so fundamental that other approaches should be found. But the reality is that the overwhelming majority of funding for biodiversity conservation in developing countries either originates from or passes through international development agencies. While these agencies do have non-project financing models, the dominant method of financing in the environmental sector, and especially in biodiversity conservation, continues to be through projects, and there is no sign that they are about to decline in importance (36). New aid delivery mechanisms are starting to provide alternatives to projects in some situations. Sector programs, adaptive program loans, learning and innovation loans and direct budget support have started to emerge as options, although there is so far limited experience in applying these approaches to conservation and development issues centered on protected areas.

Despite the rather demoralizing array of problems that ICDPs have experienced, the rationale for these types of projects has not disappeared. The notion that biodiversity could be conserved without considering a community's needs and aspirations is simply not viable. The need to address relations between protected areas and their neighbors is becoming even more compelling and urgent. Illegal activity and land degradation, decentralization of land management, the declining influence of central governments, persistent growth in the absolute numbers of poor people and—at least in some countries—increasing participation of poor rural people in a democratic process, are all increasing the pressure on biodiversity.

EMERGING PERSPECTIVES

Fortunately, some positive lessons and indications of keys to success have emerged from the ICDP experience. The opportunity therefore now exists to apply these lessons to the next generation of conservation and development programs.

Support from an external project is still often the best option, even if the 'project' is not a perfect delivery mechanism. However, it is essential to ensure that projects are designed with a very clear understanding of their objectives in terms of yielding benefits to local communities as well as mitigating threats to protected areas—in other words the all-important relationship between biodiversity and development. While poverty alleviation and environmental degradation are linked, many ICDPs have proceeded on the basis of very simple and incorrect assumptions about the nature of the dependence of poor local people on natural resource systems, and this needs to be corrected.

Root Causes and Policy Reform

Our understanding of the root causes of biodiversity loss, and environmental degradation in general, has become more sophisticated (40). It is clear that many of the most important threats to biodiversity originate far from protected area boundaries and involve issues and institutions well outside the traditional realm of conservationists. What does this mean for project identification and design? Site-specific efforts will always be necessary. However, these need to be nested within broader-based strategies supportive of biodiversity conservation and more eco-friendly forms of economic development. Interventions must occur at different scales. Policy change is as important as field-level interven-

tion. These two should ideally go hand-in-hand with local action, helping people to influence the policies that impact upon their lives. Too many of the interventions of conservation and development agencies address local symptoms while ignoring underlying policy constraints or attempt to address macro-level issues while ignoring local realities.

More effective protected area management requires local-scale interventions to be complemented by stronger law enforcement within protected areas, more effective environmental screening of nearby development projects and more aggressive policy interventions in support of biodiversity conservation. It is often necessary to support or build partnerships to pursue these objectives, sometimes with those who are not traditional allies of conservation. The use of diverse field- and policy-oriented approaches must be vertically integrated, ensuring that site-based actions are directly supported by policy-level actions both nationally and internationally (32).

Adaptive Management

The ICDP experience suggests strongly that detailed blueprint plans are inappropriate, for two absolutely critical but frequently overlooked reasons. First, the *context* of the interventions is often at least as critical as the intervention itself; and second, the *process* of program design is usually just as important as the design features themselves (24). Once these factors are taken into account, it becomes very clear that externally imposed standardized solutions cannot work. In response, the adaptive management approach offers an important opportunity to improve the ICDP implementation process (41–44). Adaptive management integrates design, management, and monitoring to systematically test assumptions in order to adapt and learn. It implies thoughtful experimentation, research, testing through implementation, monitoring, and redesign. This is a time consuming and complex process that few organizations have taken seriously, preferring a more simplistic by-line of ‘learning by doing’. Educating the people and institutions involved in an adaptive management approach to its value as well as its deficiencies is important if it is truly going to become an accepted practice and influence future ICDPs (43, 44). Transferring ‘good’ experiences from one program to another is less important than strengthening the capacity of conservation agencies, communities and project managers to experiment, learn and take effective decisions within the constraints of the contexts in which they work (17, 24).

More attention needs to be given to the *implementation* of projects rather than the current emphasis on detailed *planning*. Adaptive management merges planning with both implementation and monitoring as part of a constantly rotating project cycle, not as separate, sequential phases as is often the case now (45). The adaptive management of ICDPs would also be significantly enhanced by more flexible disbursement arrangements consistent with local absorptive capacities, recognizing that neither higher levels of funding nor faster project disbursement correlates with more successful community development. Responding to the pace of the community, rather than attempting to meet externally imposed deadlines, contributes to a more efficient participatory planning process, genuine capacity development and more profound community learning. In practice this means devolving more responsibility to the field level, staffing projects with skilled managers who are able to exercise judgment, deploying resources in a flexible manner and drawing on a tool box of different actions.

Engaging with Local Stakeholders

The nature of the “project” often inhibits real engagement with local stakeholders, thereby preventing the integration of conservation and development. Finding more effective ways to engage local constituents or stakeholders is a major challenge (46). Here we mean the people whose livelihoods, interests and futures are linked to those of a protected area, as well as institutions with relevant interests and jurisdiction such as community-based organizations, local government, national government agencies with local responsibilities, research organizations, schools and churches. The people concerned may be indigenous, recent migrants or a combination of these.

As always, there is no one-size-fits-all approach. ICDPs need to support the engagement of civil society and a broader variety of stakeholders in protected area planning and decision-making. Projects should attempt to engage stakeholders more deeply in explicitly defining the objectives of project interventions, in monitoring progress, in learning from experience, and in systematically documenting and disseminating findings.

Appropriate institutions to manage protected areas and surrounding lands within complex landscapes are rare, especially in developing countries. There are few established fora for the key stakeholders to come together, express their views and cooperate in new partnerships to develop and implement mutually-acceptable management strategies. Helping to engage these stakeholders in collaborating with one another and helping to establish representative institutions can be a key role for ICDPs (5, 47, 48).

While ICDPs can play key roles in helping bring different stakeholder interest groups together, it is important they be explicit and open about their own mission and objectives as outsiders. Having shifted from win-win scenarios to the recognition of key stakeholder interests, it rapidly becomes clear that the ICDP itself also has a vested interest. Most ICDPs funded by global constituencies explicitly aim to conserve biodiversity while paying attention to development needs and priorities. A few ICDPs led by development-oriented organizations tend to promote local social and economic interests ahead of conservation. In either case, project staff represent vested interests and should consider this carefully when presenting themselves as honest brokers seeking the integration of conservation and development (8).

Experience shows that site-specific biodiversity conservation is rarely compatible with unfettered development, income generation or livelihood interests. In practice, there will be winners and losers. So better techniques are needed to identify and understand the goals and interests of the major stakeholders in and around protected areas. Once these different interests have been identified and understood, the opportunities for negotiation and trade-offs can be explored. Until recently, there have been few systematic attempts to help stakeholders identify and then make rational choices between competing scenarios in conservation or development, partly because of the persistence of the win-win myth. More recently, however, applied researchers have begun to develop and test tools that may prove extremely useful in helping diverse groups of stakeholders understand each other’s viewpoints and make informed and appropriate choices (38, 49). One of the more exciting aspects of this work has been to dispel the conventional wisdom that outsiders can simplistically predict the outcome of such choices.

Scale Issues

The ecological and evolutionary processes that sustain biodiversity operate at large spatial and long temporal scales. These issues are rarely considered when discussing ICDP implementation. Yet scale questions are vital, including: At what scale should conservation and development trade-offs be considered? How do the heterogeneity of natural and human-dominated areas affect one another; at what scales do differing human uses interact with ecological processes? At what scales do threats affect both human and natural systems that are critical to ICDPs? At what scales are conservation targets best set (50)?

Addressing spatial and temporal scale issues at the earliest stage of ICDP design offers important advantages: *i)* it identifies biodiversity-rich priority areas at scales that offer opportunities for diverse land and resource use; *ii)* it creates data and information sufficient to formulate robust conservation targets; *iii)* it provides a broader understanding of the social, political, economic and historical fabric that will underlay conservation use and decisions; and *iv)* it looks to the long-term survival of biodiversity and of people associated with that biodiversity (8, 50, 51).

There is emerging interest in adopting large-scale or landscape conservation approaches to the integration of conservation and development (52). If properly applied, a landscape approach can balance the ecological, social and economic land uses necessary for sustainable development, including biodiversity conservation, through a process of land-use negotiations among a wide variety of stakeholders. Although still in their infancy, landscape approaches do offer the possibility of linking local initiatives with larger scale regional and national policy processes (53); however, they cannot replace the need for effective on-the-ground local action, which leads directly back to ICDPs. The challenge for practitioners is not to decide the best scale at which to operate, but rather the combinations of actions required at different scales.

Incentives for Conservation

Are there alternative ways of providing adequate conservation incentives at the site level, particularly where conflicting stakeholder interests do not appear resolvable through a project intervention? One possibility would simply be to pay cash in return for biodiversity protection (54). Selected local or national government entities, NGOs or communities would receive payments, to use as they see fit, in exchange for park management and conservation commitments. Payment schedules over extended periods would then be subject to independent performance reviews. The funding for such arrangements could originate from international sources or from government.

Governments could consider inviting tenders for the management of individual parks and reserves: for example, a government would commit to taking whatever steps necessary to protect a particular park, say for 25 years, while allowing independent monitoring. Interested parties (development agencies, NGOs, even private sector organizations) would then bid the amount they would be prepared to pay to secure this protected area, payable over the full term of the agreement as long as the government continued to live up to their protection commitment. If adequate offers of international funds were not forthcoming, the government could then decide whether to finance conservation activities domestically (perhaps based on an assessment of watershed protection,

tourism potential, or other national economic benefits) or to turn the PA over to other uses. Such an approach could also help sharpen the discussion concerning the level of financial resources that should be transferred to developing countries to support biodiversity conservation (17).

Paying directly for conservation performance may be simpler and more effective than the ICDP approach in certain specific cases (55). This type of conservation contracting can simplify the achievement of conservation goals and strengthen the links between individual actions, and habitat conservation, thus creating a local stake in ecosystem protection. Although conservation contracting does seem to offer considerable promise in North America and Europe, it depends on governance arrangements and an institutional framework that provides clarity over land use and access rights as well as the consistent enforceability of legal contracts (6, 56). These are still lacking in many developing countries.

EMERGING SIGNS OF PROMISE

There has been a recent, quiet revolution among a small and expanding number of practitioners who have managed to work out practical ways forward through a new generation of conservation projects that fit the ICDP definition, irrespective of their particular labels. Many of these resourceful and pragmatic project promoters and managers have adjusted their project objectives after becoming immersed in the practical reality of the local situation. Sometimes this has meant that detailed planning documents prepared by outside teams at great expense have been put aside, literally or figuratively, in favor of more modest and achievable goals. Key features have included (23):

- Starting to apply ICDP approaches to the management of broad landscapes that include protected areas as well as zones of more intensive human use, thereby corresponding to ecosystem approaches (52).
- Clearly articulating objectives of the protected area as well as the external project intervention.
- Building alliances with and among local communities to help establish trust.
- Building coalitions for conservation by engaging with all key stakeholders, including local and national political actors, many of whom can help address broader development-related issues and constraints beyond the scope of site-specific projects.
- Engaging with local and sectoral government agencies who are in a position to deliver key services to protected area residents and neighbors.
- Helping communities in and around ecologically-valuable sites develop and implement their own plans, by building capacity for independent planning and action among emerging community-based organizations whose activities can affect adjacent protected areas.
- Exploring the potential for local natural resource user groups to assume greater responsibility for the management of protected areas even—or especially—in cases where the activities of these users have been perceived as a threat.
- Contributing to broadening the mandates and capacities of protected area and natural resource management agency staff to better address the broader challenges of ecosystem and landscape approaches to conservation.
- Supporting basic environmental education to broaden and deepen the constituency of support for biodiversity conservation.

- Raising local awareness of the extraordinary values of local biodiversity and the importance of conservation.
- Supporting carefully selected, tentative, small-scale pilot income-generating activities with genuine local support, real prospects of sustainability and clear benefits for biodiversity conservation.

Some 'new' ICDPs have made commendable progress in these critically important areas, even though such achievements are extraordinarily difficult to measure in a convincing or cost-effective way, and may appear relatively modest in comparison to the original objectives discussed earlier. Interestingly, many of the more promising initiatives referred to here have built on earlier interventions by different organizations that laid much of the important groundwork in terms of sensitizing institutions and communities while building trust. In this way some of the inherent weaknesses of the short-term project model were avoided and what are in effect relatively long-term programs have been able to emerge.

CONCLUSIONS

The challenge is formidable and—as experience now shows—cannot be reduced to a few simple variables or pre-packaged solutions implemented during a conventional project timeframe. At any single protected area site, the stakeholders may represent a startlingly diverse range of interests, some of which may be incompatible with conservation as well as each other. People and their communities also differ significantly in their capacity to influence decision-making processes. Reconciling the needs and aspirations of local stakeholders with the goals of protected areas involves an extraordinarily complex set of issues, including not only ecological science but also social and economic policies and opportunities, land-use laws and practices, justice and human rights, formidable resource constraints and often-discouraging political realities, as well as large-scale processes and uncertainties such as climate change and international trade regimes that few protected area managers can hope to fully appreciate, let alone influence. The park managers and their staff too often lack the resources and capacities needed to carry out basic management duties, let alone to immerse themselves in these complex issues.

Whether ICDPs have worked or can work remain complex questions to answer. It is even difficult to assess what has been achieved. It does seem clear that ICDPs and related approaches have not assured the conservation of notable components of biodiversity and neither have they led to the significant reduction of poverty in and around protected areas. But either, let alone both, of these two objectives were surely unreasonable expectations given the scale and complexity of the conservation and development challenges when compared to the meager influence and resources available to site-specific biodiversity projects.

Many have argued that the ideal of integration is conceptually appealing but impossible to achieve in practice; however, the view we support is that the processes, tools and concepts that could support the widespread development and application of integrative approaches are still being developed and understood (57). While progress made by ICDPs may have been limited when measured in precise technical terms, an enormous amount has been achieved in terms of highlighting and understanding the links between conservation and development at different spatial scales and in different contexts. As a result, the essential elements for designing and implementing more effective ICDPs in the future have

been identified with reasonable confidence and in some cases are starting to be applied.

We would argue that there is plenty of evidence from experience that the principle of linking protected area management with local social and economic development remains valid. In contrast, it is the implementation of this concept that has been problematic and needs to be improved. There is simply no alternative that offers any realistic prospects of success in protected area management. The rationale for ICDPs has not disappeared. Far from it. It is clear that the ICDP approach and experiences are going to be vital to the next phase of protected area management. It is extremely important that the lessons from experience be considered carefully and applied selectively, and that another headlong rush into unproven territory is avoided.

Future ICDPs will need to be designed on the basis of clearly stated objectives together with explicit and testable assumptions and tangible conservation targets. They may evolve into loose clusters of strategies and tools brought together to achieve both conservation and development goals (43). They need to be implemented using decentralized and adaptive management, and be able to draw on a toolbox of approaches. They should promote relatively simple and adaptive conservation and development initiatives that are consistent with an overall protected area strategy but are based on specific site conditions and local community dynamics. ICDPs will need to play a more open and effective role in identifying and addressing diverse stakeholder interests, while helping build protected area management capacity and supporting these institutions efforts to become more sensitive to and supportive of local needs. While local income- or other benefit-generating opportunities should be pursued energetically, these must make sense from cultural and conservation, as well as economic perspectives.

Perhaps most critical, ICDPs cannot act in isolation. They must seek effective partnerships to address the large scale problems that defy local solutions. To effectively address these issues will require a vertically integrated mix of site-based programs, policy initiatives and campaign action. The appropriate positioning of ICDPs relative to these other complementary conservation activities operating on a variety of spatial and temporal scales will be one of the major challenges of the emerging landscape or ecoregion scale conservation approaches. Although these methodologies are in their infancy, success will depend on the links or the integration between the constituent parts.

References and Notes

1. Chape, S., Blyth, S., Fish, L. and Spalding, M. (eds). 2003. *2003 United Nations List of Protected Areas*. IUCN, Gland, Switzerland and UNEP-WCMC, Cambridge, UK 44 pp.
2. WWF 2004. *How Effective are Protected Areas? A Preliminary Analysis of Forest Protected Areas*. Report prepared for the Seventh Conference of Parties of the Convention on Biological Diversity. WWF, Gland, Switzerland.
3. Barrett, C.S. and Arcese, P. 1995. Are integrated conservation and development projects sustainable? On the conservation of large mammals in Sub-Saharan Africa. *World Development* 23, 1073-1084.
4. Brandon, K. 2001. Moving beyond integrated conservation and development projects (ICDPs) to achieve biodiversity conservation. In *Tradeoffs or Synergies?* Lee, D.R. and Barrett, C.B. (eds). CAB International, pp. 417-432.
5. Brown, K. 2003. Integrating conservation and development: a case of institutional misfit. *Front. Ecol. Environ.* 1, 479-487.
6. Ostrom, E. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press.
7. Wells, M.P. and Brandon, K. 1992. *People and Parks: Linking Protected Area Management with Local Communities*. The World Bank, U.S. Agency for International Development and World Wildlife Fund, Washington DC.
8. Franks, P. and Blomley, T. 2004. Fitting ICD into a project framework: A CARE perspective. In: *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. McShane, T.O. and Wells, M.P. (eds). Columbia University, New York, pp. 77-97.
9. Alpert, P. 1996. Integrated conservation and development projects. *BioScience* 46, 845-855.
10. Redclift, M. 1987. *Sustainable Development: Exploring the Contradictions*. Methuen,

- London and New York.
11. Robinson, J.G. 1993. The limits to caring: sustainable living and the loss of biodiversity. *Conserv. Biol.* 7, 20-28.
 12. Sachs, W. 1991. Environment and development: the story of a dangerous liaison. *The Ecologist* 21, 252-257.
 13. Christensen, J. 2004. Win-win illusions: Facing the rift between people and protected areas. *Conserv. Practice* 5.1, 12-19.
 14. Brown, K. 1998. The political ecology of biodiversity, conservation and development in Nepal's Terai: confused meanings, means and ends. *Ecol. Econ.* 24, 73-88.
 15. Sanjayan, M.A., Shen, S. and Jansen, M. 1997. *Experiences with Integrated Conservation and Development Projects in Asia*. Technical Paper No. 38. The World Bank, Washington DC.
 16. Stocking, M. and Perkins, S. 1992. Conservation-with-development: an application of the concept in the Usambara Mountains, Tanzania. *Trans. Inst. British Geogr.* 17, 337-349.
 17. Wells, M., Guggenheim, S., Khan, A., Wardoyo, W. and Jepson, P. 1999. *Investing in Biodiversity: A Review of Indonesia's Integrated Conservation and Development Projects*. The World Bank, Washington DC.
 18. Sanderson, S. and Redford, K. 2004. The defense of conservation is not an attack on the poor. *Oryx* 38, 146-147.
 19. Brockington, D. and Schmidt-Soltan, K. 2004. The social and environmental impacts of wilderness and development. *Oryx* 38, 140-142.
 20. Roe, D. and Elliott, J. 2004. Poverty reduction and biodiversity conservation: rebuilding the bridges. *Oryx* 38, 137-139.
 21. 2003 World Parks Congress. 2003. Recommendations 5.24: Indigenous Peoples and Protected Areas, and 5.29: Poverty and Protected Areas www.iucn.org/themes/wcpa/wpc2003/pdfs/outputs/wpc/recommendations.pdf
 22. McNeely, J. and Miller, K. (eds) 1984. *National Parks, Conservation and Development: The Role of Protected Areas in Sustaining Society*. Smithsonian Institution Press, Washington DC.
 23. McShane, T.O. and Wells, M.P. (eds). 2004. *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. Columbia University Press, New York.
 24. Hulme, D. and Murphree, M.W. (eds). 2001. *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*. James Currey, Oxford.
 25. Western, D. and Wright, M. (eds). 1994. *Natural Connections: Perspectives in Community-Based Conservation*. Island Press, Washington DC.
 26. Adams, J.S. and McShane, T.O. 1996. *The Myth of Wild Africa: Conservation Without Illusion*. University of California Press, Berkeley.
 27. Blomley, T. and Mundy, P. (eds). 1997. *Integrated Conservation and Development: A Review of Project Experiences from CARE*. Workshop Report. CARE Denmark, Copenhagen.
 28. Kramer, R., van Schaik, C. and Johnson, J. (eds). 1997. *Last Stand: Protected Areas and the Defense of Tropical Biodiversity*. Oxford University Press.
 29. Brandon, K., Redford, K. and Sanderson, S. (eds). 1998. *Parks in Peril: People, Politics and Protected Areas*. Island Press, Washington DC.
 30. Hart, T., Imboden, C., Ritchie, D. and Schwartzendruber, F. 1998. *Biodiversity Conservation Projects in Africa: Lessons Learned from the First Generation*. Environment Department Dissemination Note Number 62. The World Bank Washington DC.
 31. Larsen, P.S., Freudenberger, M. and Wyckoff-Baird, B. 1998. *WWF Integrated Conservation and Development Projects: Ten Lessons from the Field 1985-1996*. World Wildlife Fund, Washington DC.
 32. McShane, T.O. 1999. Voyages of discovery: four lessons from the DGIS-WWF tropical forest portfolio. *Arborvitae Supplement May 1999*. <http://iucn.org/themes/forests/outreach/arborvitae.html>
 33. Oates, J.F. 1999. *Myth and Reality in the Rain Forest: How Conservation Strategies are Failing in West Africa*. University of California Press, Berkeley.
 34. Roe, D., Mayers, J., Grieg-Gran, M., Kothari, A., Fabricius, C. and Hughes, R. 2000. *Evaluating Eden: Exploring the Myths and Realities of Community-Based Wildlife Management: Series Overview*. International Institute for Environment and Development, London.
 35. Kiss, A. 2004. Making biodiversity conservation a land-use priority. In: *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. McShane, T.O. and Wells, M.P. (eds). Columbia University, New York, pp. 98-123.
 36. Sayer, J. and Wells, M.P. 2004. The Pathology of Projects. In: *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*, pp. 35-48.
 37. McShane, T.O. and Newby, S.A. 2004. Expecting the unattainable: the assumptions behind ICDPs. In: *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. McShane, T.O. and Wells, M.P. (eds). Columbia University, New York, pp. 49-74.
 38. Faith, D.P. and Walker, P.A. 1996. Integrating conservation and development: effective trade-offs between biodiversity and cost in selection of protected areas. *Biodiv. Conserv.* 5, 417-429.
 39. Agrawal, A. and Gibson, C.C. 1999. Enchantment and disenchantment: the role of community in natural resource conservation. *World Development* 27, 629-649.
 40. Wood, A., Stedman-Edwards, P. and Mang, J. (eds). 2000. *The Root Causes of Biodiversity Loss*. Earthscan, London.
 41. Gunderson, L.H., Holling, C.S. and Light, S.S. 1995. *Barriers and Bridges to the Renewal of Ecosystems and Institutions*. Columbia University Press, New York, USA.
 42. Lee, K.L. 1993. *Compass and Gyroscope: Integrating Science and Policy for the Environment*. Island Press, Washington DC.
 43. Salafsky, N. and Margolis, R. 2004. Using adaptive management to improve ICDPs. In: *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*, pp. 372-394.
 44. Salafsky, N., Margolis, R. and Redford, K. 2001. *Adaptive Management: A Tool for Conservation Practitioners*. Biodiversity Support Program, Washington DC.
 45. Salafsky, N. and Wollenberg, E. 2000. Linking livelihoods and conservation: a conceptual framework and scale for assessing the integration of human needs and biodiversity. *World Development* 28, 1421-1438.
 46. Hutton, J. and Leader-Williams, N. 2003. Sustainable use and incentive-driven conservation: re-aligning human and conservation interests. *Oryx* 37, 215-226.
 47. Barrett, C.S., Brandon, K., Gibson, C. and Gjertsen, H. 2001. Conserving tropical biodiversity amidst weak institutions. *Bioscience* 51, 497-502.
 48. Hanna, S.S., Folke, C. and Maler, K-G (eds). 1997. *Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment*. Island Press, Washington DC.
 49. Brown, K. 2004. Trade-off analysis for integrated conservation and development. In: *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. McShane, T.O. and Wells, M.P. (eds). Columbia University, New York, pp. 232-255.
 50. Robinson, J.G. and Redford, K.H. 2004. Jack of all trades, master of none: inherent contradictions among ICD approaches. In: *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. McShane, T.O. and Wells, M.P. (eds). Columbia University, New York, pp. 10-34.
 51. Maginnis, S., Jackson, W. and Dudley, N. 2004. Conservation Landscapes: Whose Landscapes? Whose Trade-offs? In: *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. McShane, T.O. and Wells, M.P. (eds). Columbia University, New York, pp. 321-339.
 52. Redford, K.H., Coppolillo, P., Sanderson, E.W., Fonseca, G.A.B., Groves, C., Mace, G., Maginnis, S., Mittermier, R., Noss, R., Olson, D., Robinson, J.G., Vedder, A. and Wright, M. 2003. Mapping the Conservation Landscape. *Conserv. Biol.* 17.1, 116-132.
 53. Wascher, D. (ed.). 2000. *The Face of Europe: Policy Perspectives for European Landscapes*. European Centre for Nature Conservation, Tilburg, the Netherlands.
 54. Ferraro, P.J. and Kiss, A. 2002. Direct payments to conserve biodiversity. *Science* 298, 1718-1719.
 55. Simpson, R.D. and Sedjo, R.A. 1996. Paying for the conservation of endangered ecosystems: a comparison of direct and indirect approaches. *Environ. Develop. Econ.* 1, 241-257.
 56. Langholtz, J. 1996. Economics, objectives, and success of private nature reserves in sub-Saharan Africa and Latin America. *Conserv. Biol.* 10, 271-280.
 57. Sayer, J. and Campbell, B. 2004. *The Science of Sustainable Development: Local Livelihoods and the Global Environment*. Cambridge University Press.
 58. The authors thank Alan Rodgers and Jeff Sayer for their insightful and largely persuasive review comments.
 59. First submitted 23 Feb. 2004. Revised manuscript received 20 Sept. 2004. Accepted for publication 22 Sept. 2004.

Michael Wells is an independent consultant and researcher on environmental conservation and economic development in Africa and Asia, leading teams carrying out international projects, studies and evaluations, principally for the World Bank and the UN Development Programme. He has authored over 30 articles and books on the environment and sustainable development, including *People and Parks: Linking Protected Area Management with Local Communities*. His address: Tunnelveien 3, N-3400 Lier, Norway. wells@online.no

Thomas O. McShane is Senior Conservation Advisor to WWF International. He has worked as a forester and wildlife ecologist in the USA, Niger, Malawi and Gabon. He coauthored *The Myth of Wild Africa: Conservation without Illusion* and is co-editor with Michael Wells of *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. He has written extensively on conservation and people issues. His address: Avenue du Mont-Blanc, CH-1196 Gland, Switzerland. tmcshane@wwfint.org